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THE CLAIMS

What is claimed is:

1. A method for multicasting data services on an optical network, the method comprising steps of:

receiving a wavelength division multiplexed (WDM) signal from a hub node of the optical network, the WDM signal including a plurality of wavelengths;

separating at least one wavelength from the plurality of wavelengths of the WDM signal;

modulating each separated wavelength with multicast data;

recombining each separated wavelength with each wavelength of the WDM signal that was not separated from the WDM signal; and

sending the modulated WDM signal to a plurality of subscriber nodes of the optical network for delivering the multicast data.

2. The method according to claim 1, wherein the step of separating at least one wavelength includes a step of selectively separating at least one wavelength for reconfiguring delivery of multicast data.

3. The method according to claim 2, wherein the step of selectively separating at least one wavelength is controlled remotely, without manual changes being made to a device selectively separating the at least one wavelength.

4. The method according to claim 1, wherein the WDM signal includes a plurality of wavelengths for multicast data and at least one wavelength for non-multicast data.

5. The method according to claim 1, wherein the step of separating at least one wavelength includes a step of switching each separated wavelength for multicast data from the optical network to a modulator loop, and

wherein the step of recombining each separated wavelength includes a step of switching each modulated wavelength from the modulator loop to the optical network.

6. The method according to claim 5, wherein the steps of switching are performed by a four-port wavelength crossbar switch (4WCS).

7. The method according to claim 6, wherein each step of switching selectably switches at least one selected wavelength.

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8. The method according to claim 1, wherein the optical network is a unidirectional ring network.

9. The method according to claim 1, wherein the optical network is a bi-directional ring network.

10. A system for multicasting data services on an optical network, the system comprising:

a plurality of subscriber nodes coupled to the optical network;

a hub node coupled to the optical network, the hub node generating a wavelength division multiplexed (WDM) signal, the WDM signal including a plurality of signal wavelengths;

a selection device separating at least one selected wavelength from the WDM signal; and

a modulator node coupled to the selection device and receiving each separated wavelength, the modulator node modulating each separated wavelength with multicast data,

the selection device recombining each separated wavelength with each wavelength of the WDM signal that was not separated from the WDM signal and sending

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the modulated WDM signal to a plurality of subscriber nodes of the optical network for delivering the multicast data.

11. The system according to claim 10, wherein the selection device selectively separates at least one wavelength reconfiguring delivery of multicast data.

12. The system according to claim 11, wherein the selection device is controlled remotely, without manual changes being made to the device for selectively separating the at least one wavelength.

13. The system according to claim 10, wherein the WDM signal includes a plurality of wavelengths for multicast data and at least one wavelength for non-multicast data.

14. The system according to claim 10, wherein the WDM signal includes a plurality of wavelengths for multicast data and at least one wavelength for non-multicast data, and

wherein the modulator node includes a multicast modulator modulating each wavelength for multicast data with the multicast data in the modulator node.

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15. The system according to claim 10, wherein the selection device is a four-port wavelength crossbar switch (4WCS).

16. The system according to claim 15, wherein the switch selectably switches at least one selected wavelength.

17. The system according to claim 10, wherein the optical network is a unidirectional ring network.

18. The system according to claim 10, wherein the optical network is a bi-directional ring network.

19. A modulator loop for an optical network, the modulator loop comprising:
a multicast modulator modulating a plurality of selected wavelengths of a wavelength division multiplexed (WDM) signal with multicast data; and
a switch coupled to the optical network and to the multicast modulator, the switch receiving a WDM signal having a plurality of wavelengths for multicast data, the switch switching each wavelength for multicast data from the optical network to the multicast modulator, and switching each modulated wavelength to the optical network.

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20. The modulator loop according to claim 19, wherein the switch is a four-port wavelength crossbar switch (4WCS).

21. The modulator loop according to claim 20, wherein the switch selectably switches at least one selected wavelength.

22. The modulator loop according to claim 19, wherein the optical network is a unidirectional ring network.

23. The modulator loop according to claim 19, wherein the optical network is a bi-directional ring network.